

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-07900006-2010**

Application Received: **December 28, 2009**

Plant Identification Number: **079-00006**

Permittee: **Appalachian Power Company (d.b.a. American Electric Power)**

Facility Name: **John E. Amos Plant**

Mailing Address: **1 Riverside Plaza, Columbus, OH 43215-2373**

Revised: N/A

Physical Location:	St Albans, Putnam County, West Virginia
UTM Coordinates:	428.16 km Easting • 4258.42 km Northing • Zone 17
Directions:	From Charleston, take Interstate 64 West (towards Huntington). Turn right onto Exit 44 ramp and proceed to Route 817. Turn left onto Route 817 (North). The facility is located approximately 1.5 miles on the right.

Facility Description

The Amos Plant is a fossil fuel fired electric generation facility and operates under Standard Industrial Classification (SIC) code 4911. The facility consists of two (2) coal-fired steam generators with a rated design capacity of 7,020 mmBtu/hr each, one (1) coal-fired steam generator with a rated design capacity of 11,936 mmBtu/hr, one (1) oil-fired auxiliary boiler with a rated design capacity of 642 mmBtu/hr, one (1) oil-fired auxiliary boiler with a rated design capacity of 600 mmBtu/hr, various supporting operations such as coal handling and ash handling, and various tanks with insignificant emissions. The facility has the potential to operate seven (7) days per week, twenty-four (24) hours per day and fifty-two (52) weeks per year.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2009 Actual Emissions
Carbon Monoxide (CO)	10,173.1	1354.5
Nitrogen Oxides (NO _x)	71,988.9	3,440.1
Particulate Matter (PM _{2.5})	1,638	264.6 filterable / 1139.0 filterable with condensables
Particulate Matter (PM ₁₀)	4,103.18	599.9 filterable / 1471.4 filterable with condensables
Total Particulate Matter (TSP)	6,681,024	915.9
Sulfur Dioxide (SO ₂)	122,478.78	45,578.0
Volatile Organic Compounds (VOC)	1,000.5	161.5
<i>PM₁₀ is a component of TSP.</i>		
Hazardous Air Pollutants	Potential Emissions	2009 Actual Emissions
Beryllium	23.42	0.02
Hydrogen Chloride	21,580	2,800
Hydrogen Fluoride	1,874	200
Selenium	84.88	5.5
Total of other Miscellaneous non-major HAP	33.5	2.96

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 122,478.78 tons per year of SO₂, 71,988.9 tons per year NO_x, 4,103.18 tons per year PM₁₀, 10,173.1 tons per year CO, 1000.5 tons per year VOCs and 23,595.8 tons per year HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, John E. Amos Plant is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:

45CSR2	To Prevent And Control Particulate Air Pollution From Combustion Of Fuel In Indirect Heat Exchangers
45CSR6	Control Of Air Pollution From Combustion Of Refuse
45CSR10	Control of Sulfur Dioxide Emissions from Indirect Heat Exchangers.
45CSR11	Prevention Of Air Pollution Emergency Episodes
45CSR13	Permits For Construction, Modification, Relocation And Operation Of Stationary Sources Of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, And Procedures For Evaluation
45CSR16	Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60
45CSR30	Requirements For Operating Permits
45CSR33	Acid Rain Provisions And Permits
45CSR34	Emission Standards For Hazardous Air Pollutants
45CSR38	Provisions For Determination Of Compliance With Air Quality Management Rules
45CSR39	Control Of Annual Nitrogen Oxides Emissions
45CSR40	Control Of Ozone Season Nitrogen Oxides Emissions
45CSR41	Control Of Annual Sulfur Dioxide Emissions
40 C.F.R 60, Subpart Y	Standards of Performance for Coal Preparation Plants
40 C.F.R. 60, Subpart OOO	Standards of Performance for Nonmetallic Mineral Processing Plants
40 C.F.R. Part 61, Subpart M	National Emission Standard For Asbestos
40 C.F.R. Part 64	Compliance Assurance Monitoring
40 C.F.R. Part 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters
40 C.F.R. Part 72	Permits Regulation
40 C.F.R. Part 73	Sulfur Dioxide Allowance System
40 C.F.R. Part 74	Sulfur Dioxide Opt-ins
40 C.F.R. Part 75	Continuous Emissions Monitoring
40 C.F.R. Part 76	Acid Rain Nitrogen Oxides Emission Reduction Program
40 C.F.R. Part 77	Excess Emissions
40 C.F.R. Part 78	Appeals Procedure (for Acid Rain Program)
40 C.F.R. Part 82, Subpart F	Ozone depleting substances
WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.

State Only:

45CSR4	To Prevent And Control The Discharge Of Air Pollutants Into The Open Air Which Causes Or Contributes To An Objectionable Odor Or Odors
45CSR42	Greenhouse Gas Emissions Inventory Program
CO-R2-E-2005-2	Consent Order Creating a Compliance Program for fugitive fly ash dust control systems.
CO-E-2009-12	Consent Order Creating a Compliance Program for Operation of a Dry-Sorbent Injection System.
WVDAQ Letter	Letter dated September 3, 2002 addressed to Mr. Greg Wooten and signed by Jesse D. Adkins regarding the thermal decomposition of boiler cleaning solutions.

WVDAQ Letter

Letter dated January 21, 2004 addressed to Mr. Frank Blake and signed by Jesse D. Adkins regarding the combustion of Demineralizer Resins.

Each State and Federally-enforceable condition of the draft Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the draft Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the draft Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-480	March 8, 1979	
R13-2663C	July 13, 2010	
CO-E Consent Order No. CO- R2-E-2005-2-	February 8, 2005	
CO-E-2009-12	July 16, 2009	
U.S. District Court Consent Decree regarding Civil Actions C2-99-1182, C2-05-360, and C2- 04-1098	December 13, 2007	
R33-3935-2012-3	December 18, 2007	
CAIR Permit	December 21, 2009	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table B," which may be downloaded from DAQ's website.

Determinations and Justifications

This is a renewal of the Title V permit which was issued on June 29, 2005 and modified on October 26, 2007 and on May 27, 2009. Changes to the original (and modified) Title V Permit consist of the following:

1). 45CSR37 - Mercury Budget Trading Program To Reduce Mercury Emissions

- This Rule has been repealed. Therefore the CAMR Mercury Budget Trading Program requirements have been removed from the permit.

2). 45CSR42 - Greenhouse Gas Emissions Inventory Program

- This rule is applicable only when the facility becomes an “affected source” by emitting any greenhouse gas on an annual basis greater than the *de minimis* amounts listed in section 3.1 of the rule i.e.:

Greenhouse Gas Compound	tons/year
carbon dioxide	10,000
methane	476
nitrous oxide	32.6
hydrofluorocarbons	0.855
perfluorocarbons	1.09
sulfur hexafluoride	0.42

If the applicability threshold is triggered, then in accordance with a reporting cycle provided by the Secretary, affected sources shall report to the Secretary the quantity of all greenhouse gases emitted above *de minimis* amounts in the years specified by the Secretary under Section 4. of 45CSR42.

- 3). **Condition 3.4.2.** – The language in this condition has been modified to include the language from Permit R13-2663.
- 4). **Condition 4.1.6.** – “State-Enforceable only” has been added to the citation of authority. This requirement is taken from a state consent order and is not federally enforceable. The initial permit did not indicate that the requirement was State-Enforceable only.
- 5). **Condition 4.1.7.** – At the company’s request, the 45 CSR10 (Rule 10) SO₂ emission limit of 41,561.6 lb/hr was replaced with 29,428 lb/hr which was established using the flue gas desulphurization (FGD) modeling submitted with an NSR permit determination regarding the installation of the FGD System.. Compliance with the Rule 10 limit is streamlined by demonstrating compliance with the FGD modeling limit.

6). Dry Sorbent Injection for SO₃ Mitigation

- The installation and operation of a Selective Catalytic Reduction (SCR) system, in conjunction with a wet FGD system on a boiler combusting high sulfur coal, leads to increased concentrations of SO₃ above that amount generated by coal combustion. Subsequently, the SO₃ reacts with moisture in the stack plume to support the secondary formation of H₂SO₄. If not minimized, the increase in SO₃ and subsequent increase in the formation of H₂SO₄ can impact the visible appearance of the stack discharge of the plume, including downwind of the stack.

The Amos Plant SCR installation utilizes a low conversion catalyst that helps minimize the conversion of SO₂ to SO₃ by the SCR system. Nevertheless, a supplemental SO₃ mitigation system is needed to help reduce SO₃ concentrations. Based on AEP’s evaluation of various SO₃ mitigation systems at other AEP generating facilities, it was determined by AEP that the primary SO₃ mitigation system that would be constructed at Amos plant would be a dry sorbent injection system. Primarily, the dry sorbent of choice is Trona. Nevertheless, hydrated lime will be used as the dry sorbent as a backup to the Trona injection. If hydrated lime is used, the dry sorbent injection system will need to be supplemented with the injection of liquid magnesium hydroxide into the boiler.

Review of technical information shows that dry sorbent injection is beneficial to reduce blue plume formation and sulfuric acid release to the atmosphere. The permittee currently operates a dry sorbent (i.e., Trona) injection system as described above. Thus, there is permitting value gained by creating a permit condition to require operation of the dry sorbent injection system. Therefore the renewal Title V permit contains a new condition requiring the permittee to continuously operate the dry sorbent injection system. The new condition is not imposing any further limitation or standard beyond what the permittee is already practicing. The new condition is making a requirement of what the permittee has already proposed and volunteered to do in order to mitigate the formation of SO₃. The authority to make dry sorbent injection a permit requirement is taken from 45CSR§30-12.7., which states: *The Secretary may incorporate any provision into a permit which has been proposed by or agreed to by a permit applicant and which does not conflict with any applicable requirement. All such provisions shall be enforceable after issuance of a final permit* and from Consent Order CO-E-2009-12 (see below). Dry sorbent injection has been proposed by the permittee and required by the CO-E-2009-12. Furthermore, the dry sorbent injection system does not conflict with any applicable requirement. Refer to permit condition 4.1.9.

➤ **Consent Order CO-E-2009-12**

This consent order creates a Compliance Program for operation of a Dry-Sorbent Injection System (DSI) for sulfur trioxide (SO₃) control. In addition to adding a requirement to the Title V permit (see above discussion), other requirements deal with a technical and operational evaluations over a 12 month period which began on August 1, 2009 in order to determine the appropriate operating parameters for the SO₃ DSI control system. During this period, SO₃ testing was also required. A report including summaries of the operating data collected and the results of test was required to be submitted to the DAQ by October 31, 2010. Within 30 days after submission of the report a 45CSR13 permit application for the operation of the SO₃ DSI control systems for all units at Amos shall be submitted to the Director of the DAQ.

- Sections 1 and 2 of the consent order have been incorporated into the Title V permit as required by the consent order. Refer to permit conditions 4.1.9., 5.2.7., 5.2.8., and 5.4.7.
- A requirement to submit to the Director a 45CSR13 permit application for the operation of the SO₃ DSI control system as contained in Item 6 under the “ORDER FOR COMPLIANCE” section of Consent Order has been added to the Title V permit. A requirement to submit to the Director a Title V permit modification application has also been added. Refer to permit condition 5.1.20.

7). 40 CFR Part 64 – Compliance Assurance Monitoring (CAM)

- The permittee submitted a CAM plan in the renewal application for Units 1, 2 and 3 to assure compliance with the 45CSR§2-4.1.a. PM mass limitation, which is 1,200 lb/hr aggregated from the three units through a combined emission point *CS012* (for Units 1 & 2) and emission point *AM3* (for Unit 3). Unit 1, Unit 2 and Unit 3 Steam Generators are CAM pollutant-specific emission units (PSEUs) for particulate matter emissions. The PM emissions are controlled by electrostatic precipitators (ESPs).

Monitoring per the CAM Plans for each of the PSEUs is identical and will be as follows:

		Indicator No. 1
I.	Indicator	Opacity
	Monitoring Approach	Opacity is continuously measured and recorded by a certified opacity monitoring system (4.2.1. and 4.2.2.).
II	Indicator Range	The indicator range is zero to 10% opacity, and will be verified by testing (4.2.7.). Monitoring shall be implemented within 180 days of issuance of this renewal permit (4.2.7.c.). Continuously measured opacity values are reduced to six-minute block averages (4.2.6.a.). These 6-minute averages are averaged into 3-hour block average opacity values (4.2.6.c.). An excursion is defined as two consecutive 3-hour block averages greater than 10% (4.2.6.c.). Excursions trigger an inspection, evaluation, and corrective action (4.2.9.). Excursions are also included in the recordkeeping (4.4.4.), and reporting requirements (4.5.6.).
	A. QIP threshold	If five (5) percent or greater of the 3-hour average COMS opacity values indicate excursions during a calendar quarter, the permittee must develop a QIP (4.2.11. and 4.3.2.).
III	Performance Criteria	The location of the opacity monitors is in accordance with 40 C.F.R. 60, Appendix B, Performance Specification 1 (PS-1). The COMS was installed in accordance with PS-1. Therefore, the employed COMS must be used to comply with CAM (see §64.3(d)(1)), and §§64.3(a) and (b) are automatically satisfied when COMS is used (see §64.3(d)(2)(ii)). Refer to conditions 4.2.1. and 4.2.2.
	A. Data Representativeness	
	B. Verification of Operational Status	The COMS is not <i>new or modified monitoring equipment</i> ; therefore, verification of operational status pursuant to §64.3(b)(2) is not applicable.
	C. QA/QC Practices and Criteria	The COMS was installed and evaluated in accordance with PS-1. Zero and span drift are checked daily, and filter audits are performed in accordance with PS-1. §64.3(b)(3) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii). Refer to condition 4.2.1. and 4.2.2.
	D. Monitoring frequency	The monitoring frequency is continuous (4.2.1., 4.2.12.). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).
	E. Data Collection Procedure	The data are collected by a computerized data acquisition and handling system (DAHS). This system collects and retains all relevant opacity data (4.2.1., 4.4.4.). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).
	F. Averaging Period	The averaging period is on a six-minute block basis (4.2.1.). §64.3(b)(4) is automatically satisfied when COMS is used, according to §64.3(d)(2)(ii).

- The CAM rule is not applicable to the units for Carbon monoxide (CO), Volatile Organic Compounds (VOCs), or Hazardous Air Pollutants (HAPs) since there are no emission limitations or standards for these pollutants
- The units are exempt from the CAM rule under 40 CFR§64.2(b) for the following pollutants:
 - *Oxides of Nitrogen (NO_x)*
The units are subject to emission standards that apply solely under an emissions trading program that has been approved by the Administrator.
 - *Sulfur Dioxide (SO₂)*
The units are subject to emission standards prescribed by the Acid Rain Program pursuant to sections 404, 405, 406, 407(a), 407(b), or 410 of the Act.
- There are no add-on control devices for emissions discharged from the two auxiliary boilers. Therefore, CAM is not applicable to these boilers

- Other general CAM requirements are set forth in permit subsections 4.2., 4.3., 4.4., and 4.5.

8). Minor Modification (R30-07900006-2005 MM02)

- This renewal permit incorporates a minor modification to the initial permit. The minor modification incorporates into the Title V Permit the requirements of R13-2663C, which is for the creation of a dedicated haul road in order to transport bottom ash and fly ash from the three units to the Flue Gas Desulphurization (FGD) Landfill. The modification also incorporates requirements from R13-2663B which updated the fly ash handling system but was not previously incorporated into the Title V Permit. R13-2663B was superseded by and replaced with R13-2663C.
- The emission limit table for emissions “under worst case operation” was deleted in Permit R13-2663B and therefore has been deleted in the Title V permit

9). 40 CFR Part 60 Subpart OOO – *Standards of Performance for Nonmetallic Mineral Processing Plants*

- This Subpart is applicable to the Limestone Processing System (all the equipment is listed in the Emission Units Table 1.1 under “Limestone Handling” and “Non-Metallic Mineral (Limestone) Processing System”) per 60.670(a)(1). With the exception of some of the transfer points, all of the affected equipment is fully enclosed or contained in a building. There are no vents from the buildings. Therefore, pursuant to 40 CFR§60.672(b), fugitive emissions from the affected facilities without a capture system outside of the buildings shall not exceed ten (10) percent opacity. Pursuant to 40 CFR§60.672(e)(1) fugitive emissions from the building openings must not exceed 7 percent opacity.
- Since the Unit 1 FGD is not in service, the maximum production rate has not been achieved. Therefore the initial testing has not been completed. Initial tests shall be completed within 60 days of reaching maximum production rates in accordance with 40 CFR Part 60 Subpart OOO §§60.675(a), (d) and (g).
- Condition 5.3.1 has been modified to include monthly visual observations of the limestone buildings and transfer points.
- Pursuant to 40 CFR §60.676(f), written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in § 60.672 of 40 CFR Subpart OOO, including reports of opacity observations made using Method 9 (40 CFR part 60, Appendix A–4) to demonstrate compliance with § 60.672(e) shall be submitted.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

45CSR5	Pursuant to 45CSR5, if 45CSR2 is applicable to the facility, then the facility is exempt from 45CSR5. 45CSR2 is applicable to the facility.
45CSR17	Pursuant to 45CSR17, if 45CSR2 is applicable to the facility, then the facility is exempt from 45CSR17. 45CSR2 is applicable to the facility.
40 C.F.R. 60 Subpart D	The fossil-fuel-fired steam generators potentially affected by this rule have not commenced construction or modification after August 17, 1971.

40 C.F.R. 60 Subpart Da	The electric utility steam generating units potentially affected by this rule have not commenced construction or modification after September 18, 1978.
40 C.F.R. 60 Subpart K	The facility does not include storage vessels that are used to store petroleum liquids (as defined in 40 CFR 60.111(b)) and that have a storage capacity greater than 40,000 gallons for which construction, reconstruction or modification was commenced after June 11, 1973 and prior to May 19, 1978.
40 C.F.R. 60 Subpart Ka	The facility does not include storage vessels that are used to store petroleum liquids (as defined in 40 CFR 60.111a(b)) and that have a storage capacity greater than 40,000 gallons for which construction, reconstruction or modification was commenced after May 18, 1978 and prior to July 23, 1984.
40 C.F.R. 60 Subpart Kb	Storage vessels potentially affected by this rule are exempted because they contain liquids with a maximum true vapor pressure of less than 3.5 kPa, have a storage capacity of less than 40 cubic meters, or have not commenced construction, reconstruction or modification after July 23, 1984
40 C.F.R. 60 Subpart Y	<p>The coal handling equipment potentially affected by this rule, except for the two crushers “CR-70E” and “CR-70W,” has not been constructed or modified after October 24, 1974.</p> <p>The Putnam Terminal coal handling equipment was constructed after October 24, 1974 but does not prepare coal by any of the processes listed in 40 CFR §60.251(a) and therefore is not defined as a “coal preparation plant.”</p>
40 C.F.R. 63 Subpart Q	This facility does not include industrial process cooling towers that have operated with chromium-based water treatment chemicals on or after September 8, 1994.
40 CFR 63 Subpart ZZZZ	The engine driven fire pumps (EDFP-Unit1, EDFP-Unit2, & EDFP-Unit3) are existing emergency stationary RICE and therefore are not subject to the requirements of this subpart pursuant to 40 CFR §63.6590(b)(3).

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date:	November 10, 2010
Ending Date:	December 10, 2010

All written comments should be addressed to the following individual and office:

Frederick Tipane
Title V Permit Writer
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Point of Contact

Frederick Tipane
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
Phone: 304/926-0499 ext. 1215 • Fax: 304/926-0478

Response to Comments (Statement of Basis)

Not applicable.